

## ABSTRACT

The invention provides nonhuman transgenic animals with a disrupted *FHIT* gene. The invention further provides transgenic mice in which one or both *Fhit* alleles have been inactivated. Preferably, the *Fhit*-deficient mice develop multiple tumors of both visceral and sebaceous origin, similar to those of Muir-Torre familial cancer syndrome. The present invention further relates to the generation of these transgenic mice and their use as model systems to study the effects of carcinogenic agents in promoting clonal expansion of neoplastic cells in cancers, preferably gastrointestinal cancers of which Muir-Torre syndrome is a subset. The invention further relates to testing therapeutic agents for their efficacy in the prevention and treatment of cancer, preferably gastrointestinal cancer.

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